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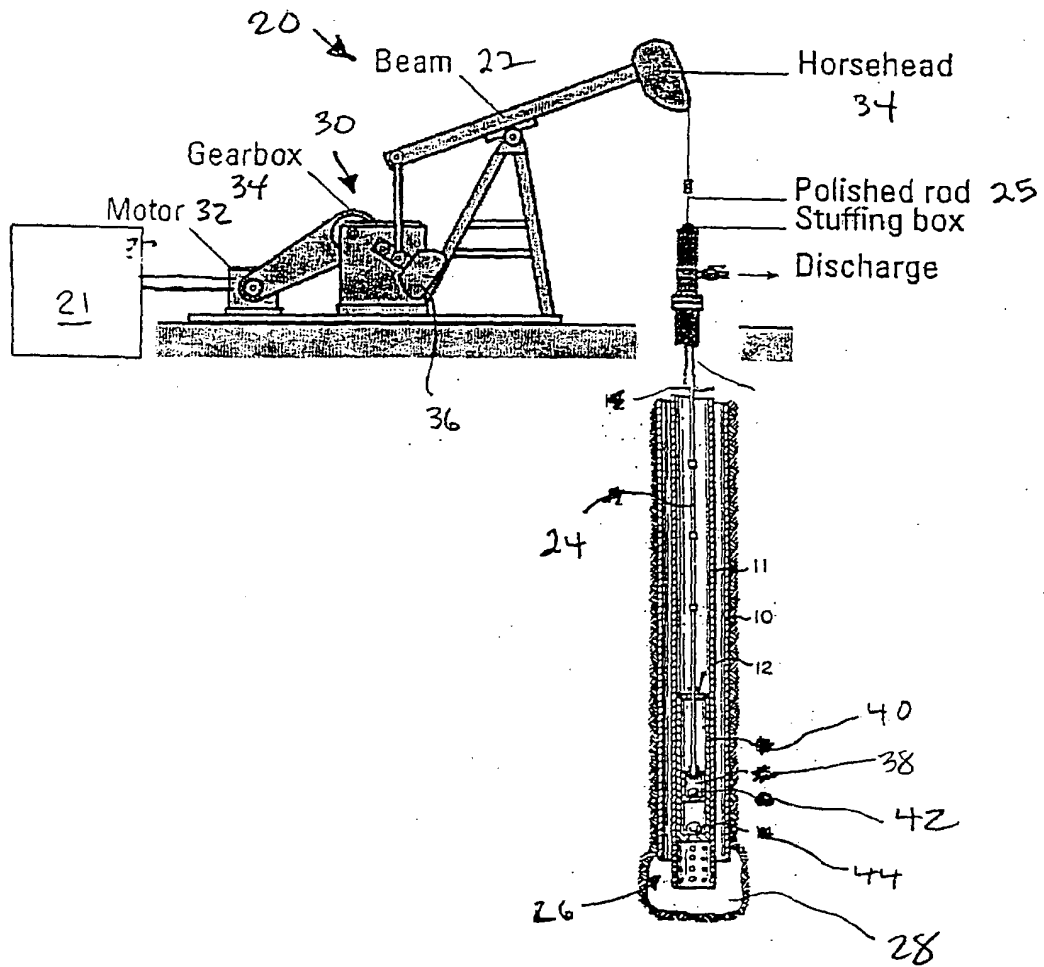
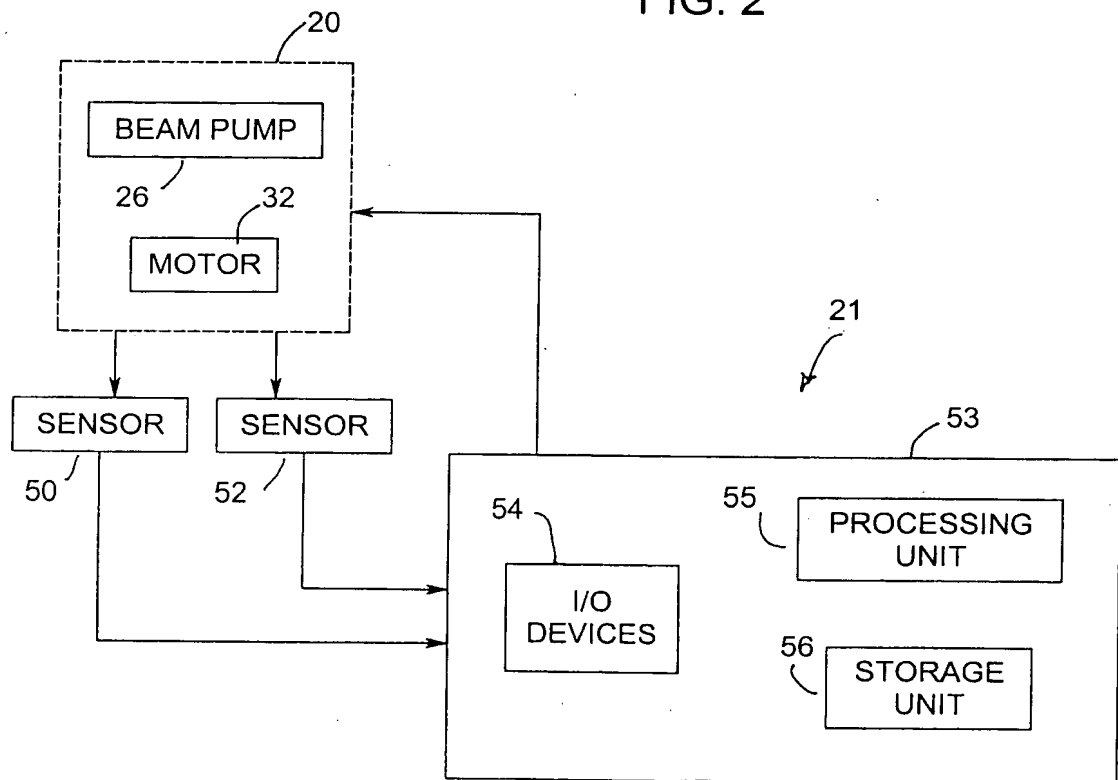


FIG. 1

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FIG. 2



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Sensorless Rod Pump Surface Estimates

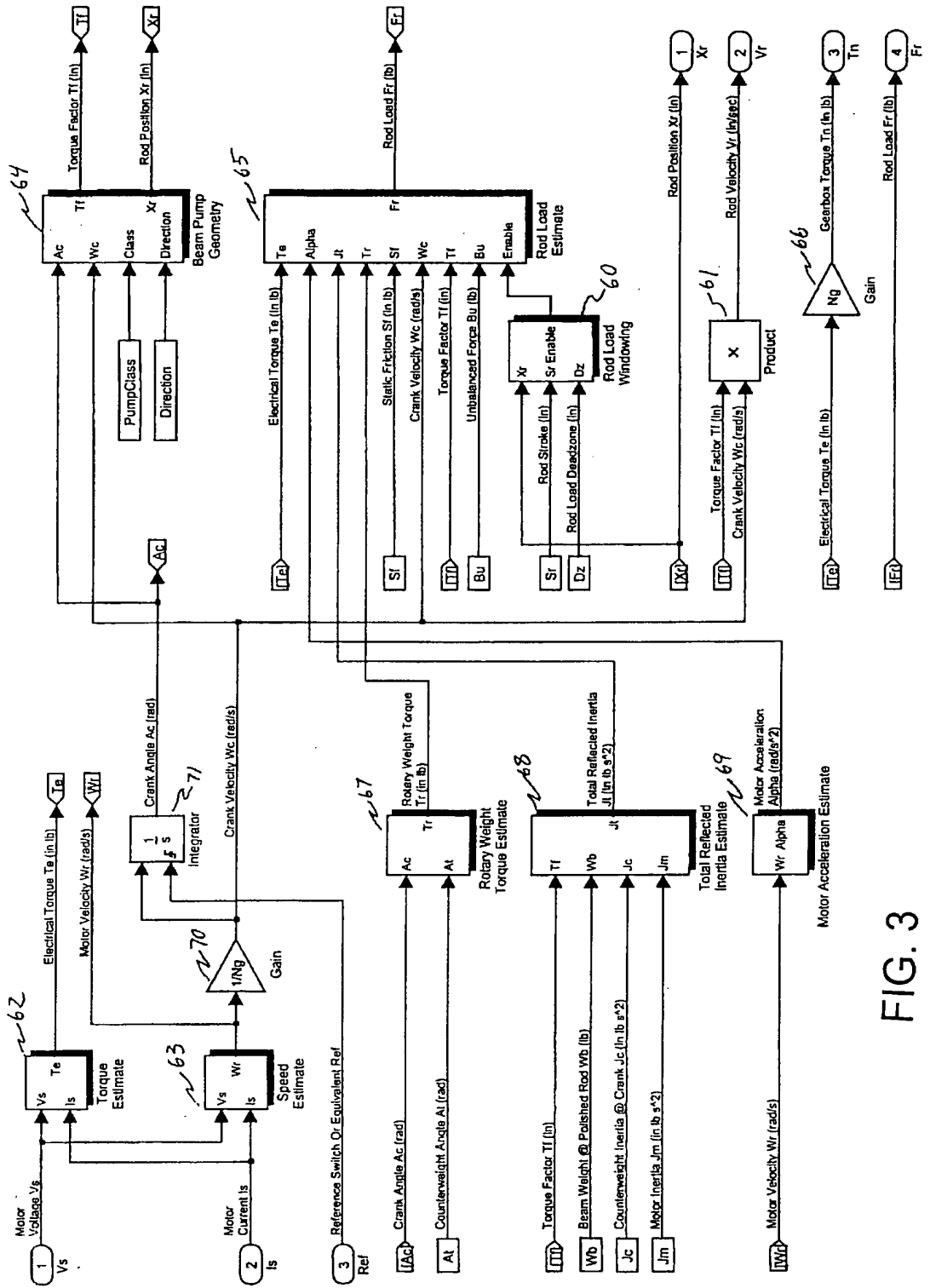


FIG. 3

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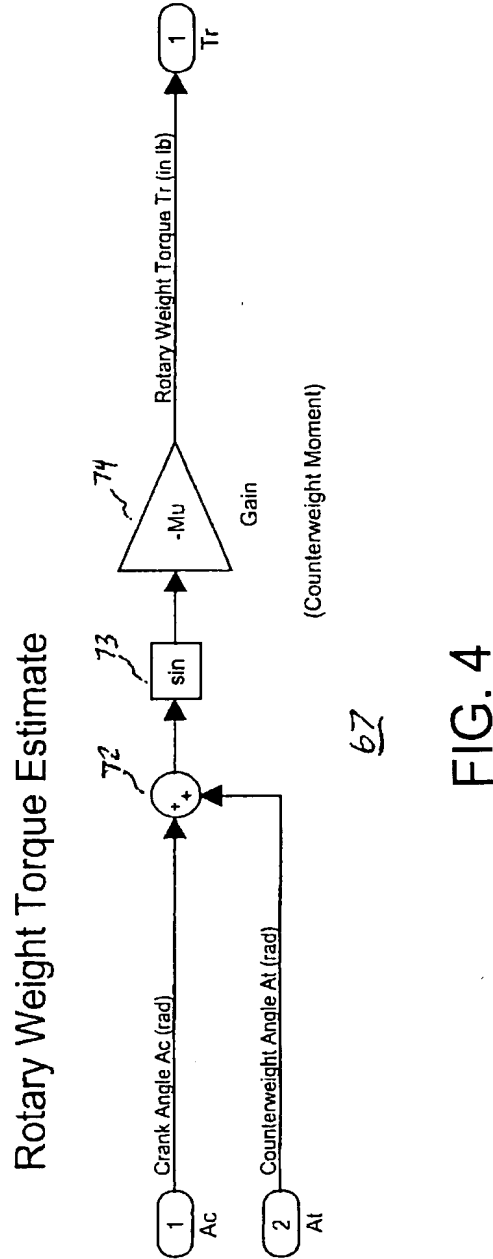


FIG. 4

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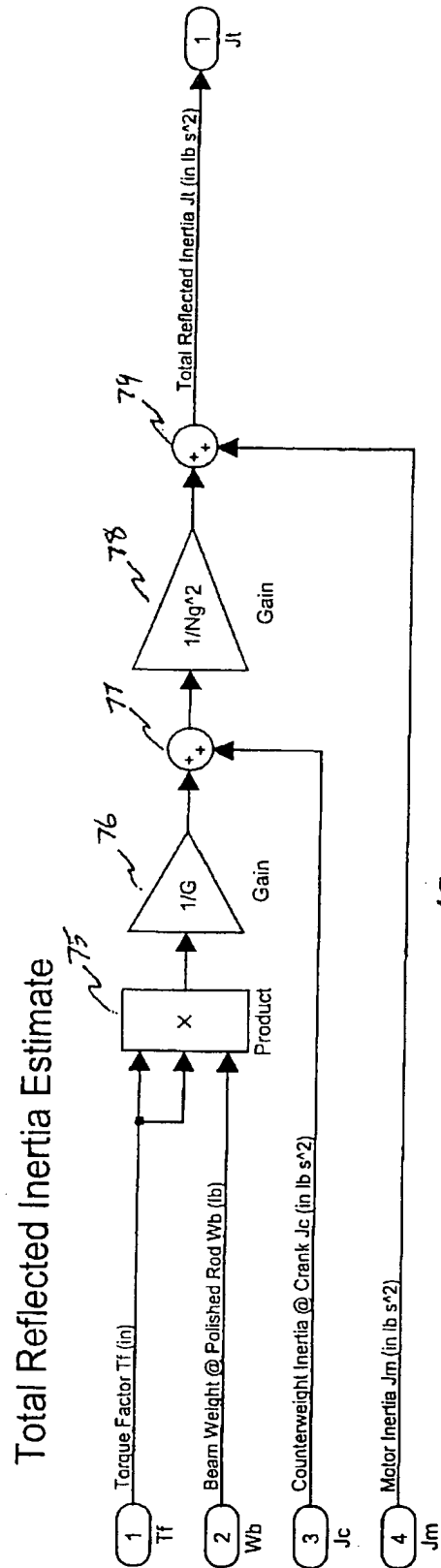
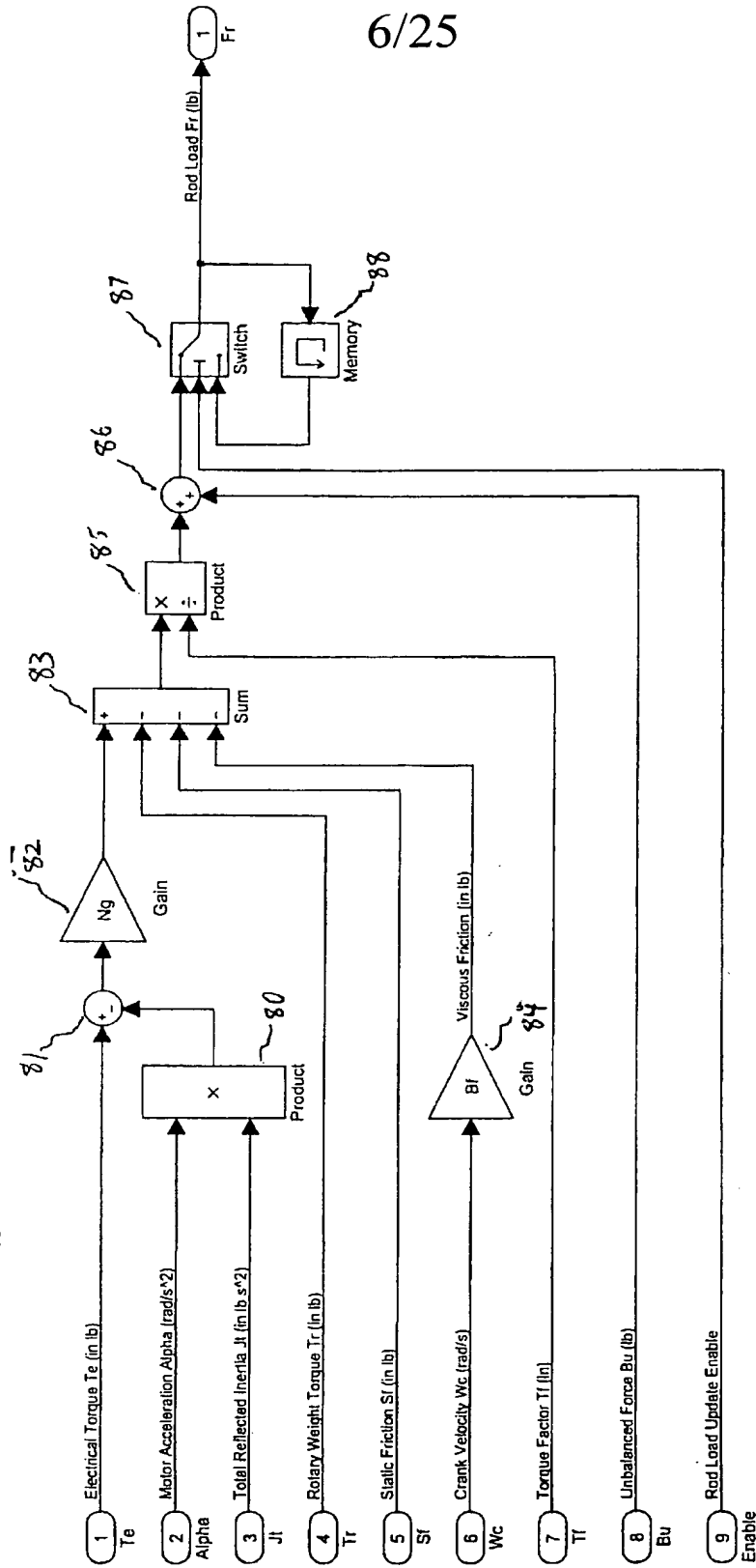


FIG. 5

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Rod Load Estimate

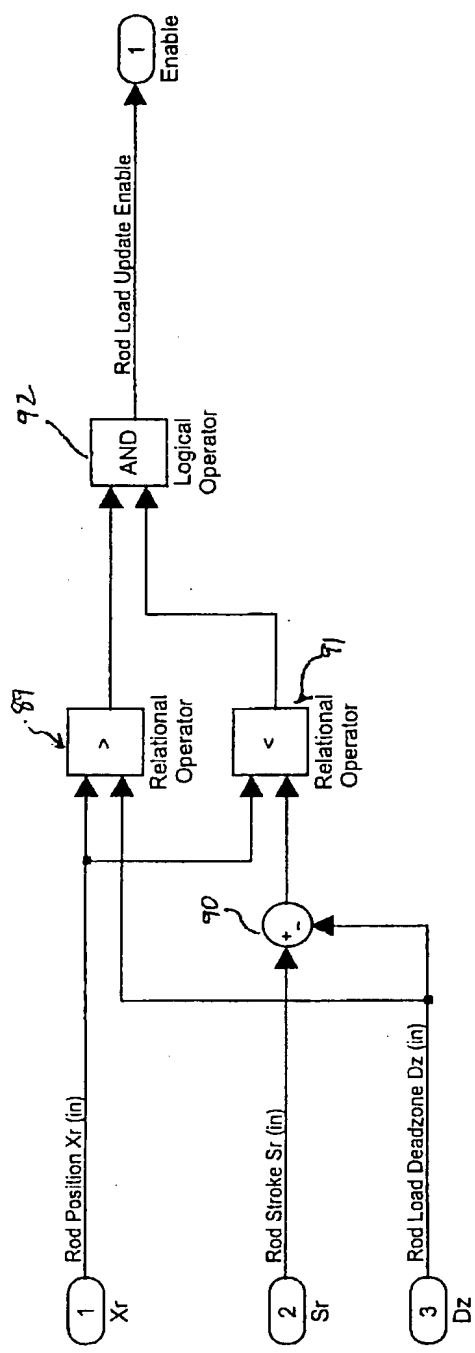


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FIG. 6

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Rod Load Windowing

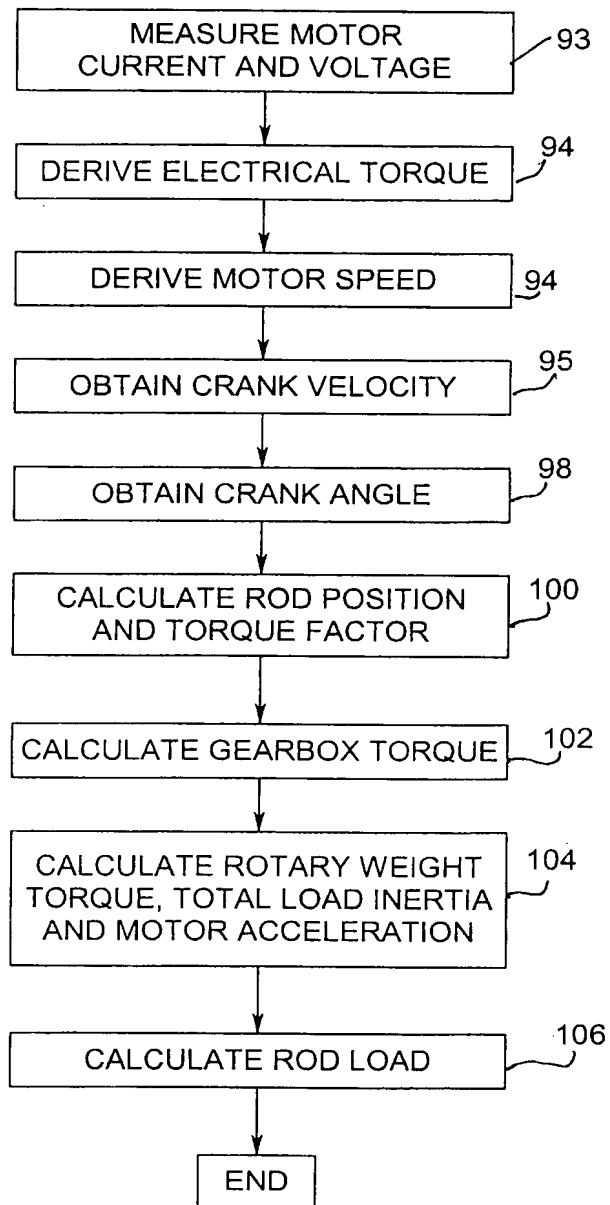


60

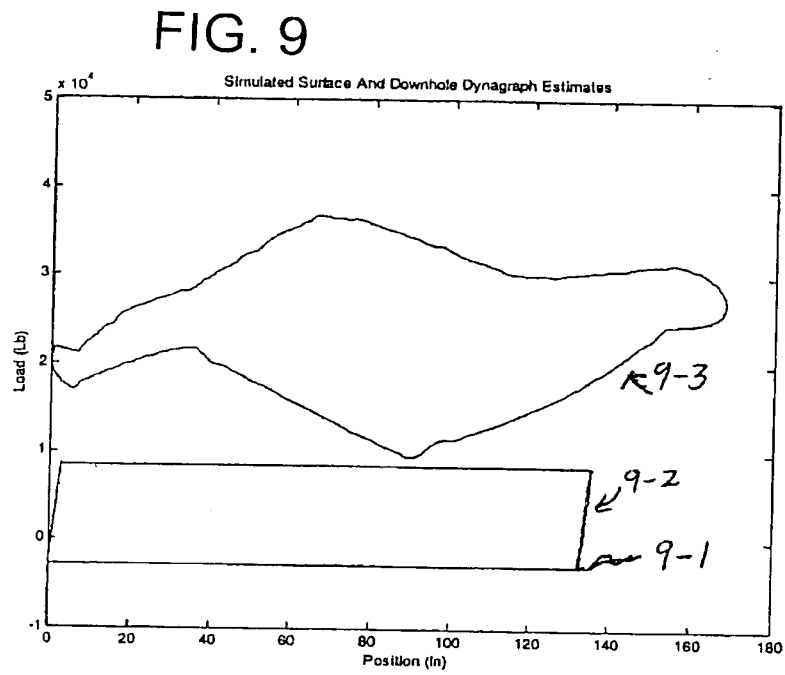
FIG. 7

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FIG. 8

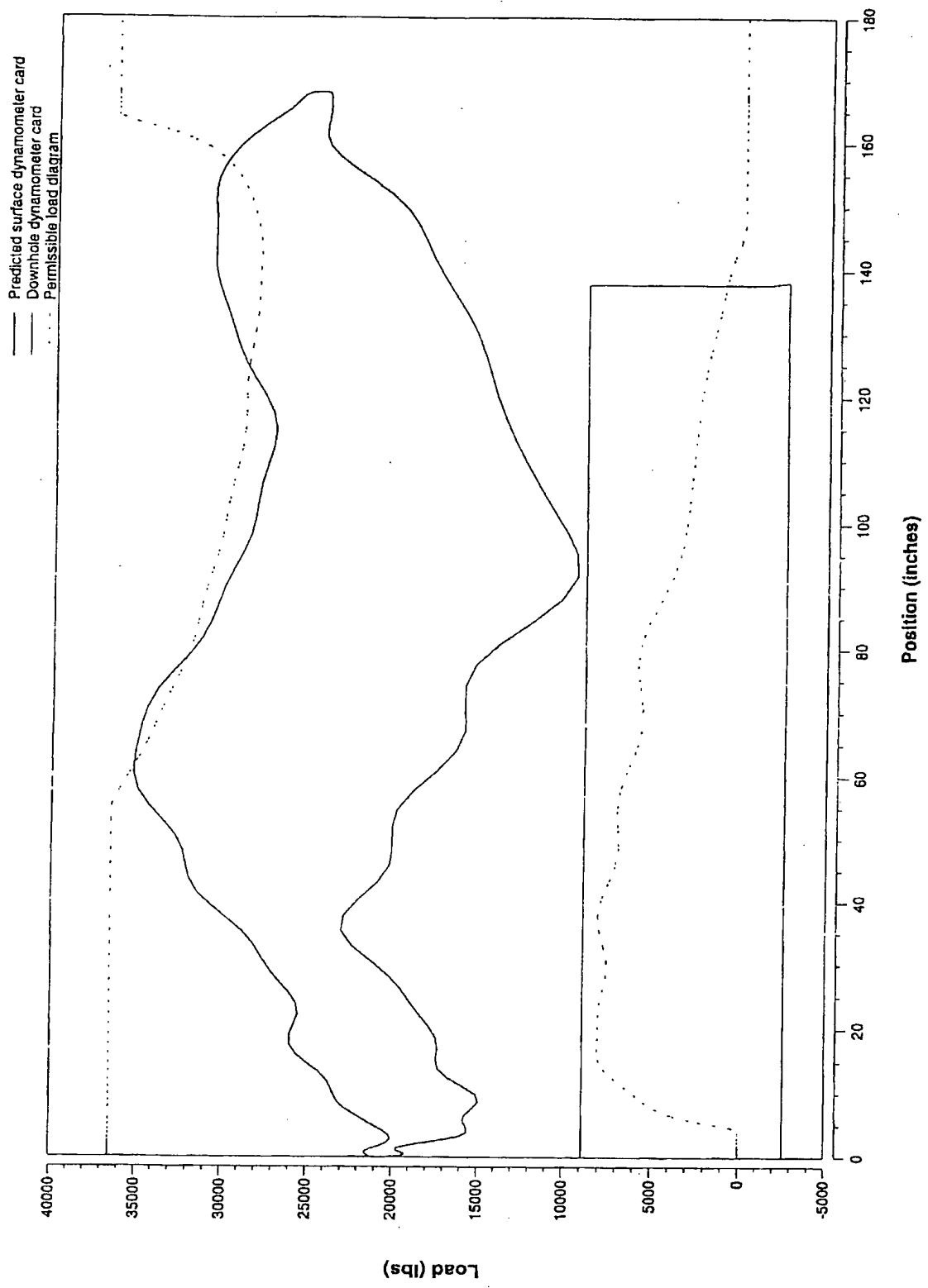


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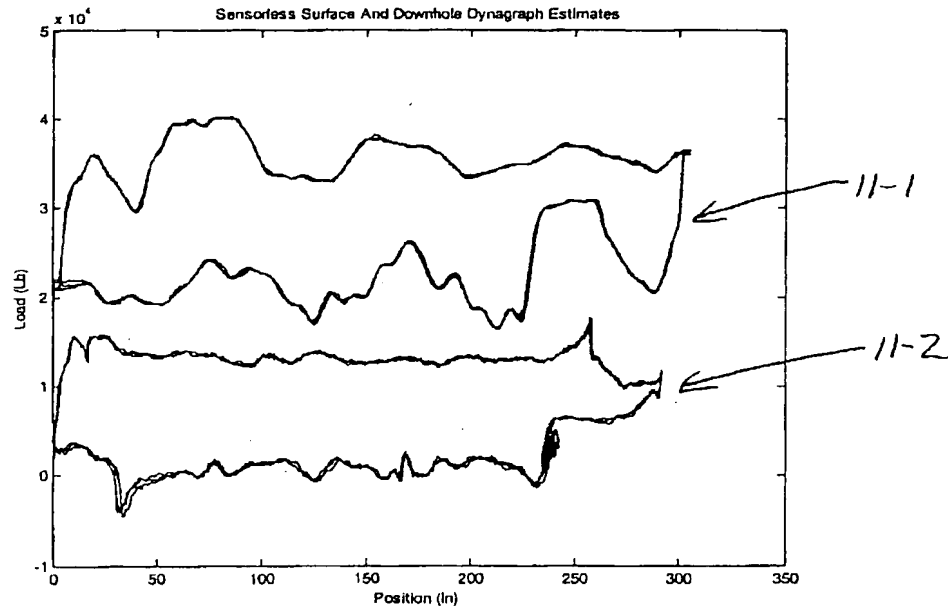
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FIG. 10
Predicted Dynamometer Plots
Well: 7z 556a



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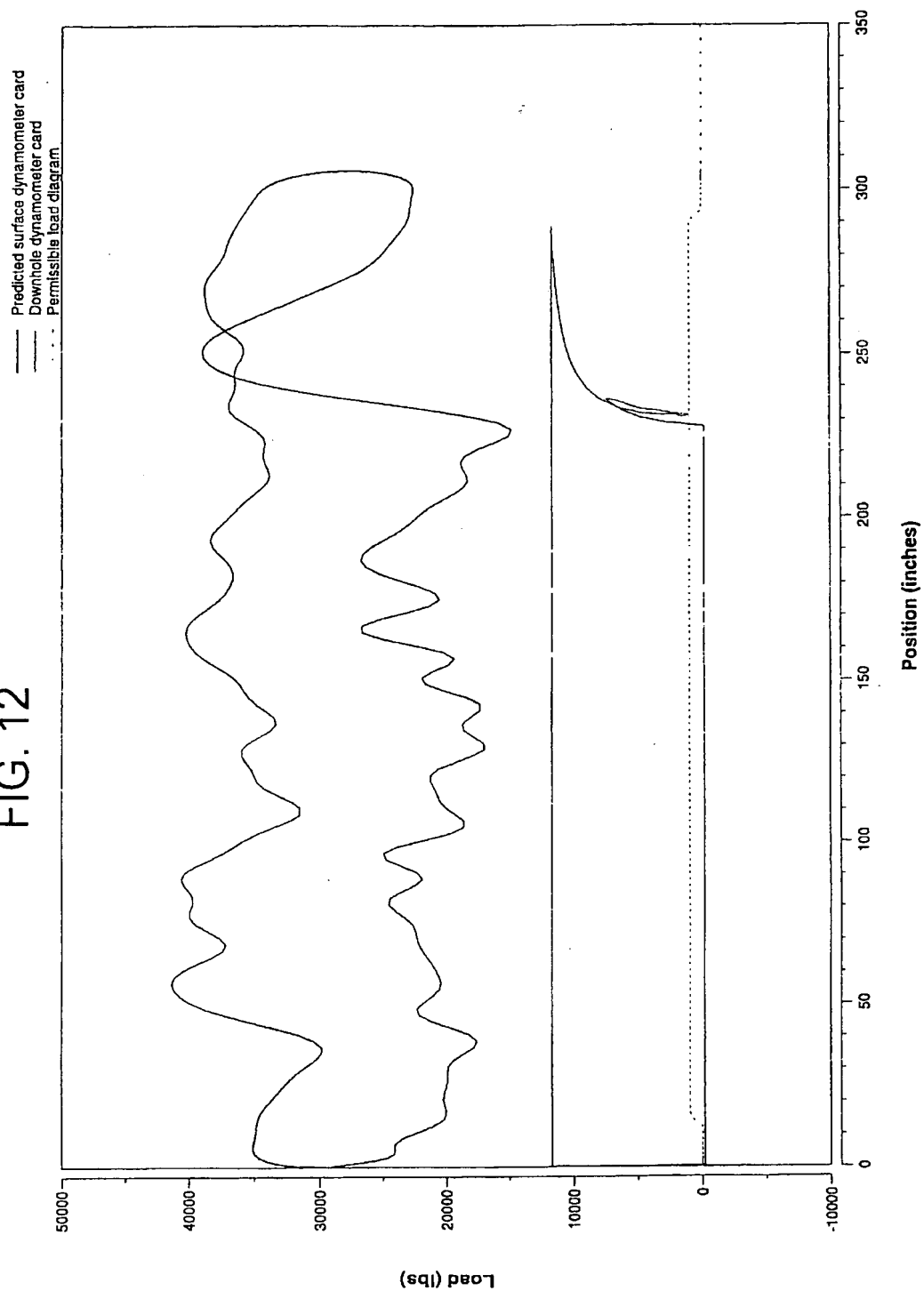
FIG. 11



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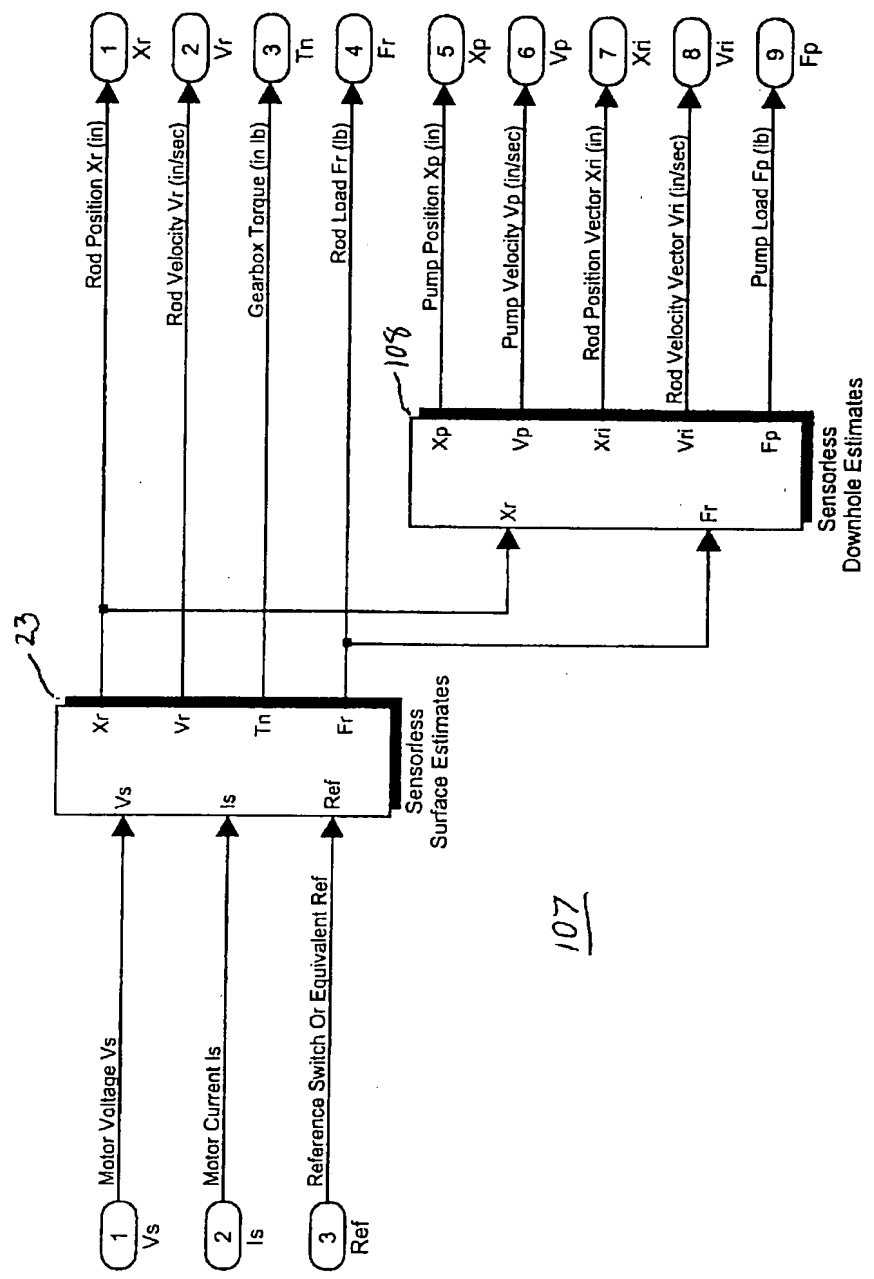
Predicted Dynamometer Plots

FIG. 12



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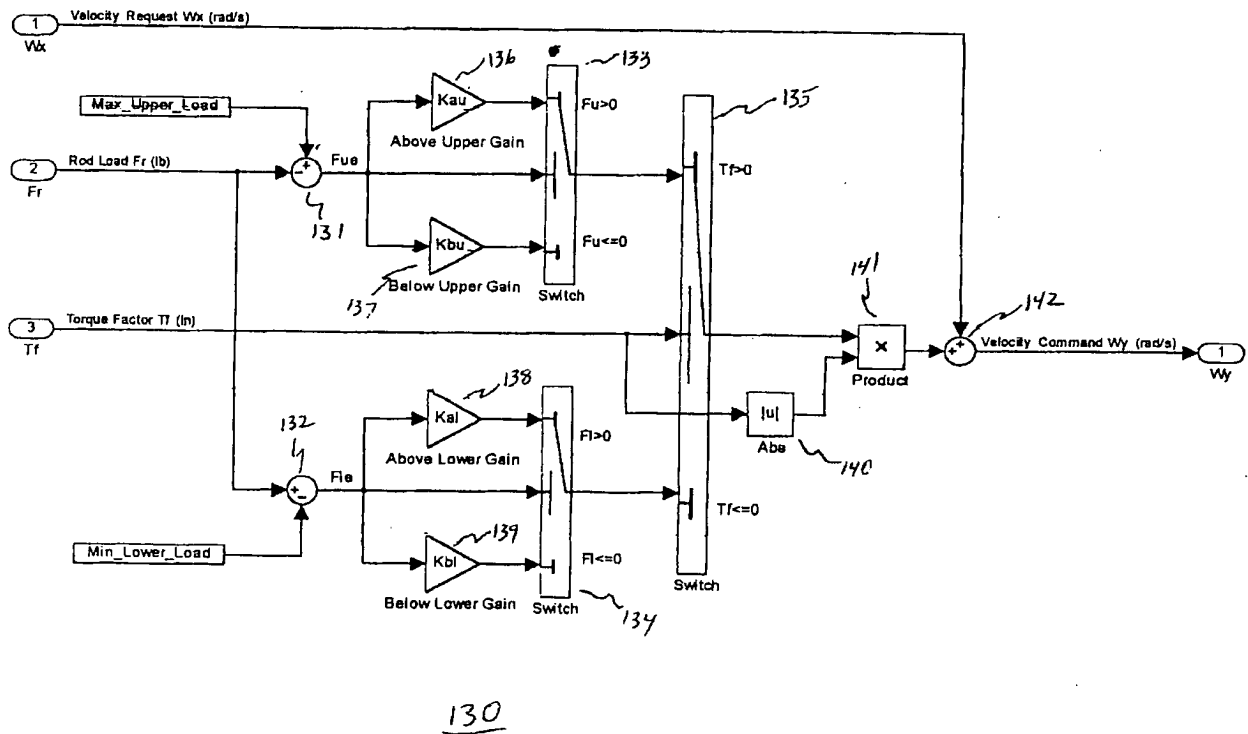
FIG. 13
 Sensorless Rod Pump
 Surface And Downhole Estimates



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FIG. 14

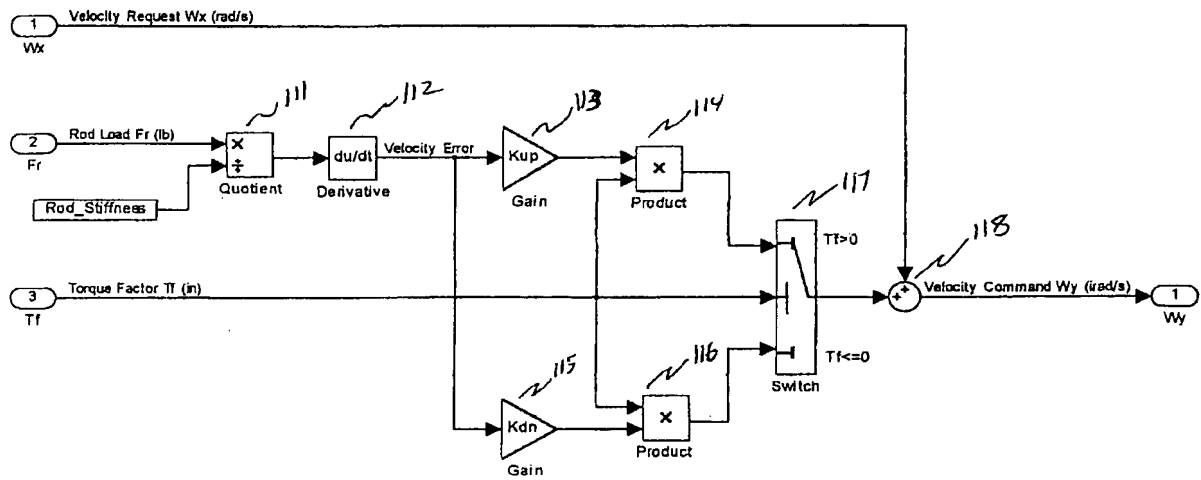
Rod Load Control



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FIG. 15

Rod Load Damping Control

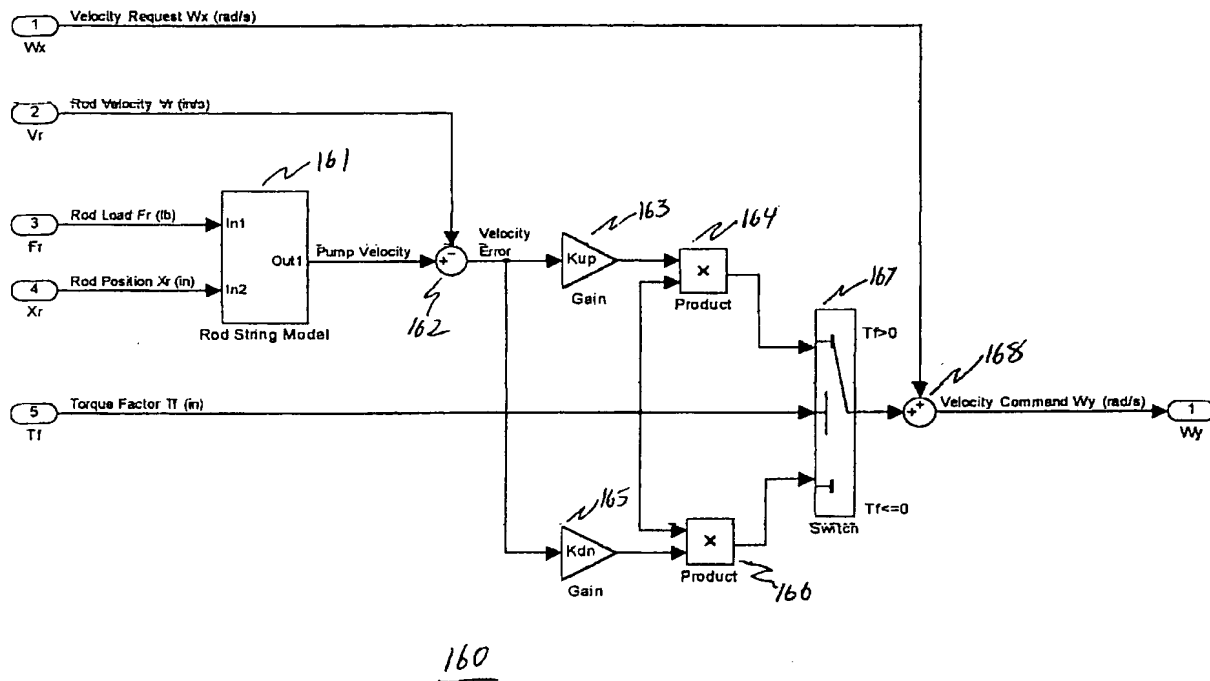


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FIG. 16

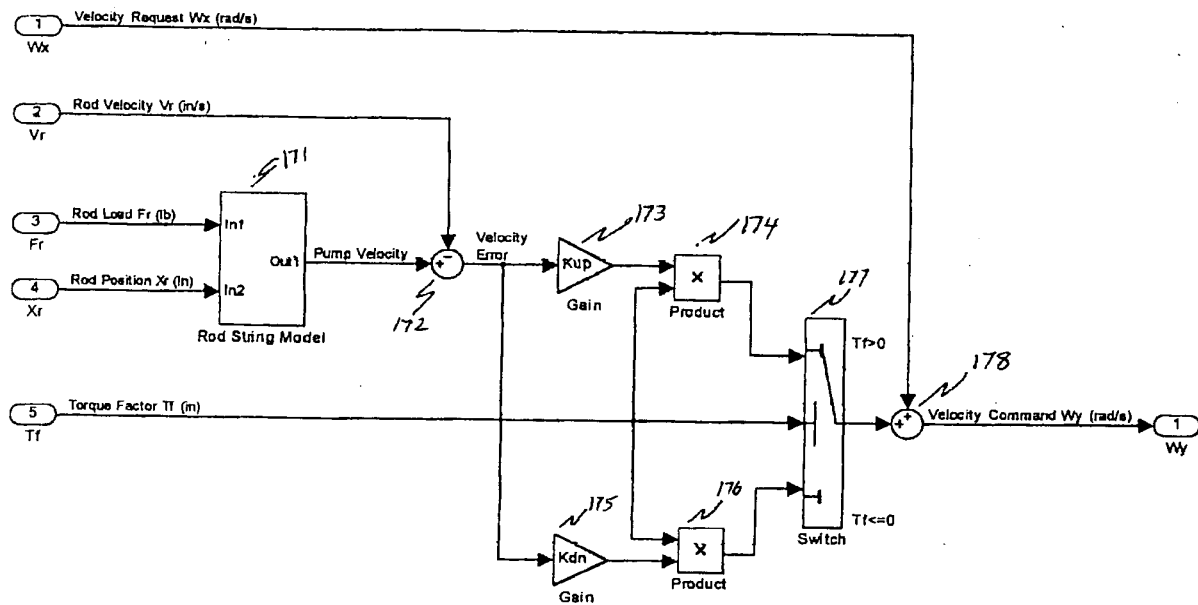
Simulation Model Control



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FIG. 17

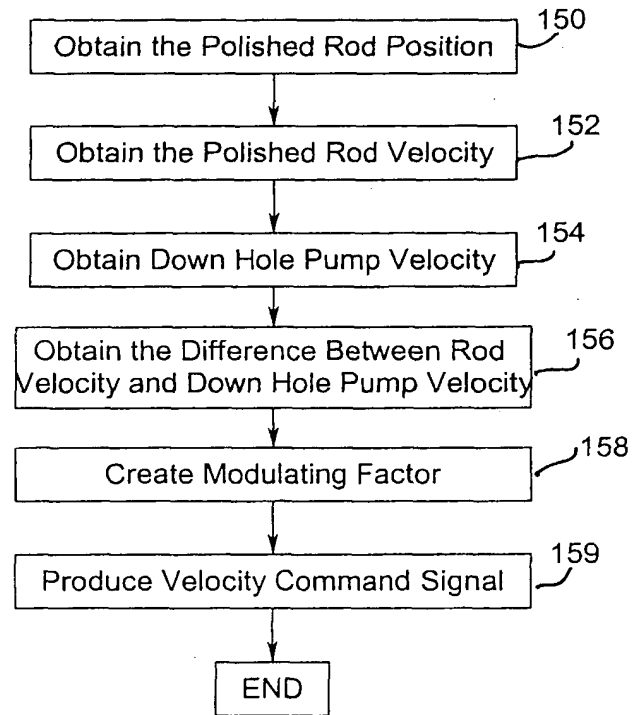
Wave Equation Control



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FIG. 18



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Surface Dynamometer Graph, 7 SPM.

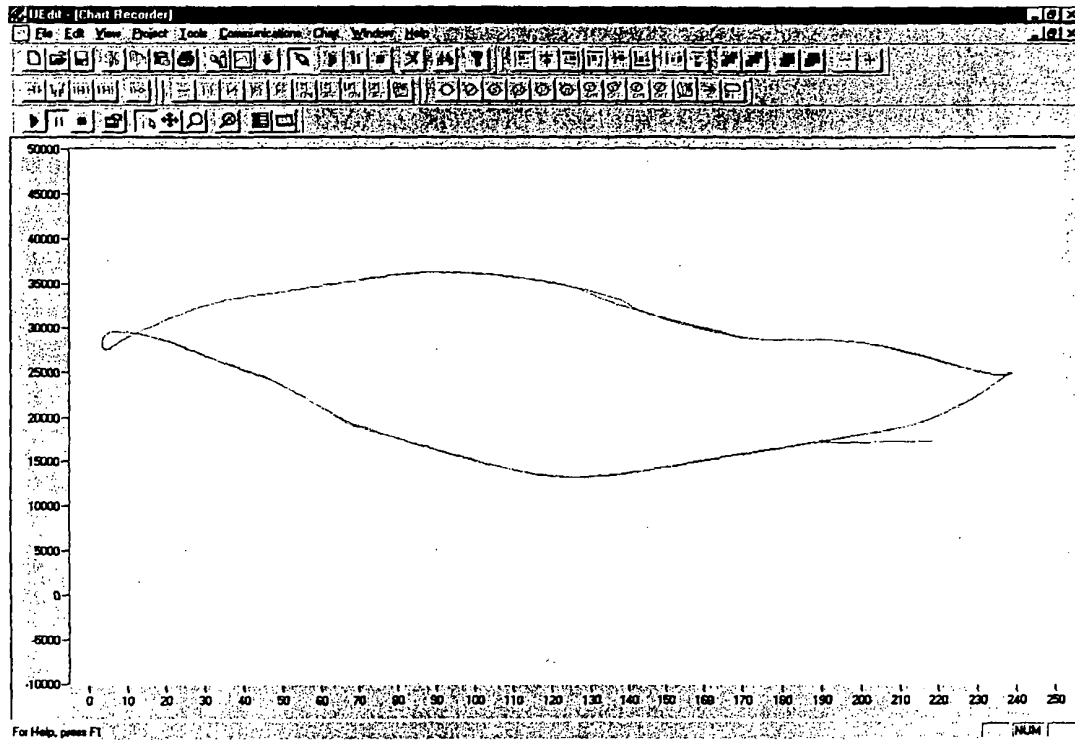


FIG. 19

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Surface Dynamometer Graph, 7 SPM.

Control Enabled

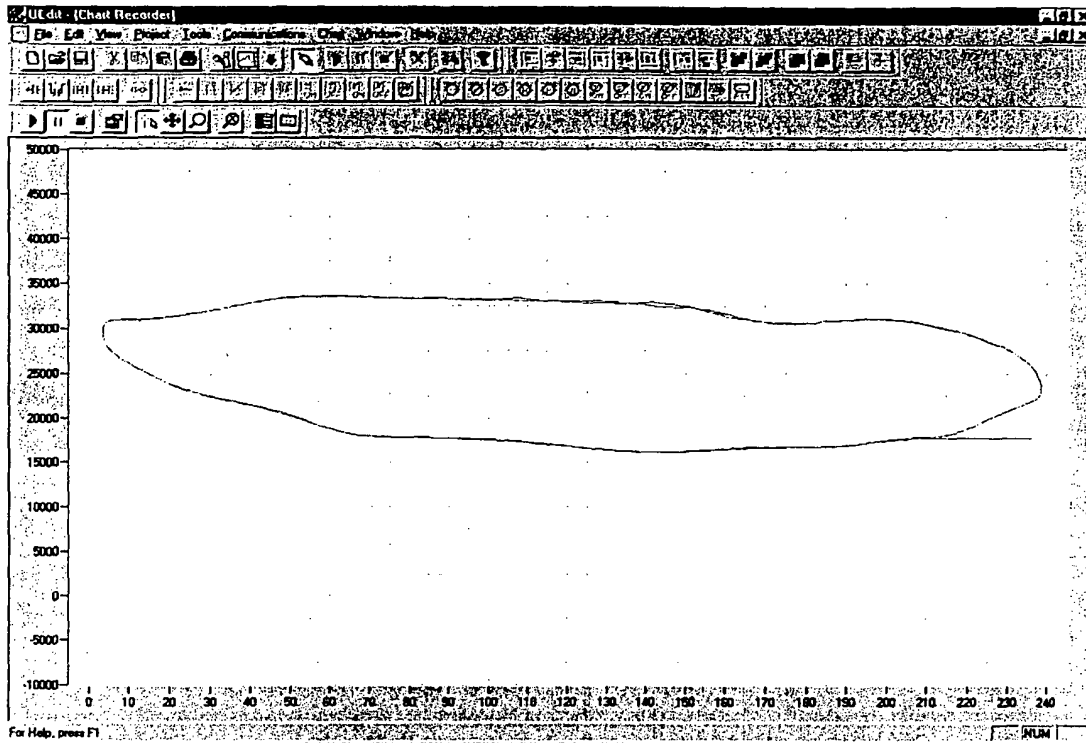


FIG. 20

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Pump Dynamometer Graph, 7 SPM,

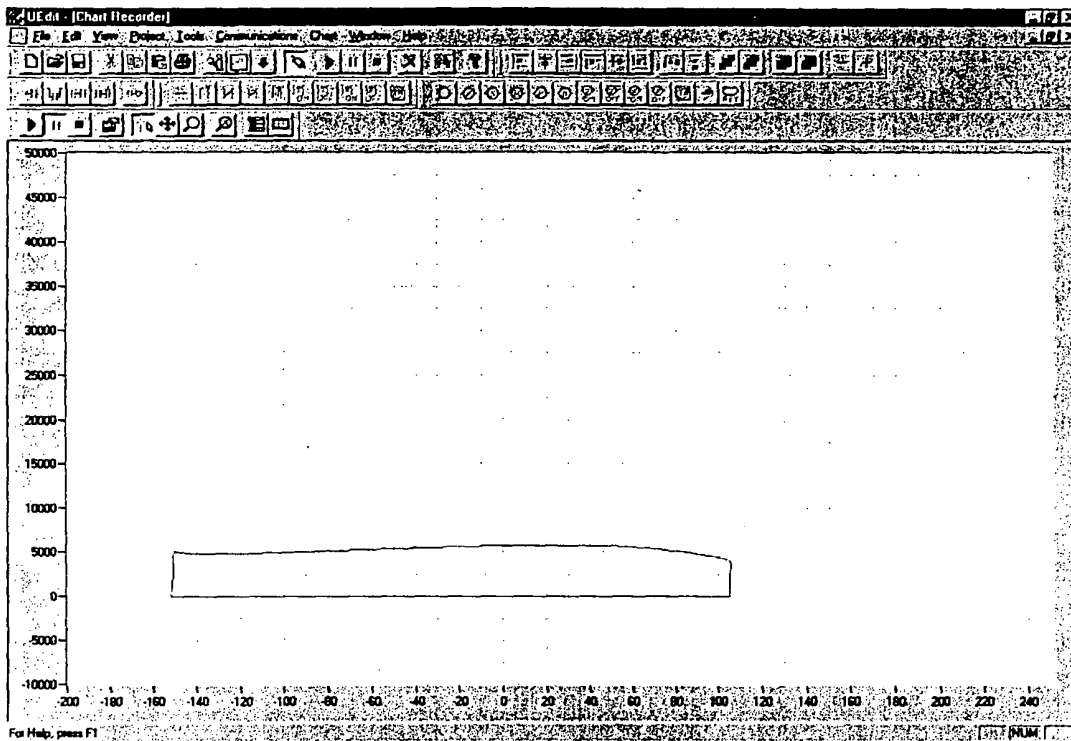


FIG. 21

Pump Dynamometer Graph, 7 SPM,

: Control Enabled

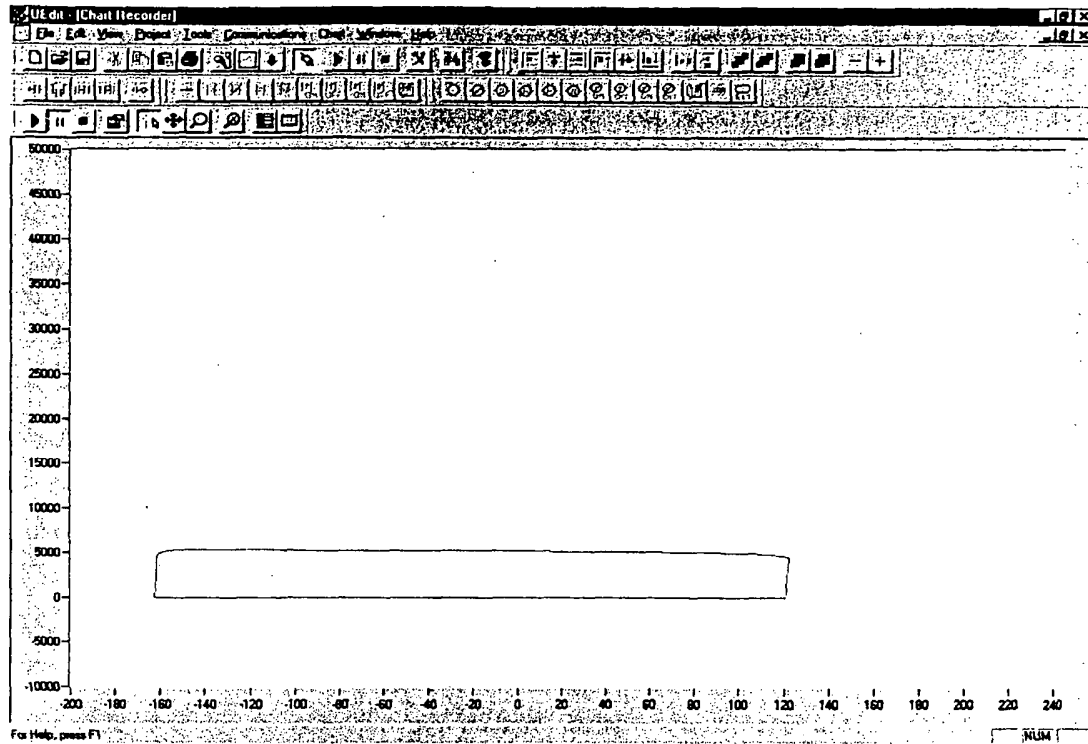


FIG. 22

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Pump Velocity, 7 SPM,

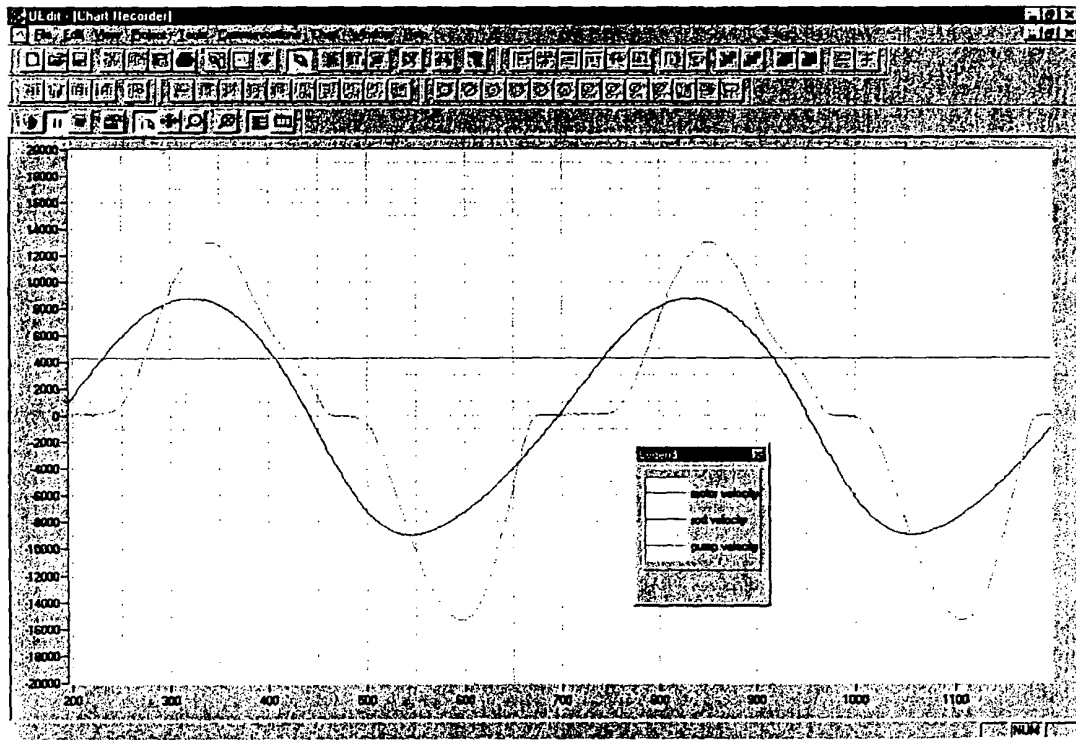


FIG. 23

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Pump Velocity, 7 SPM,

Control Enabled

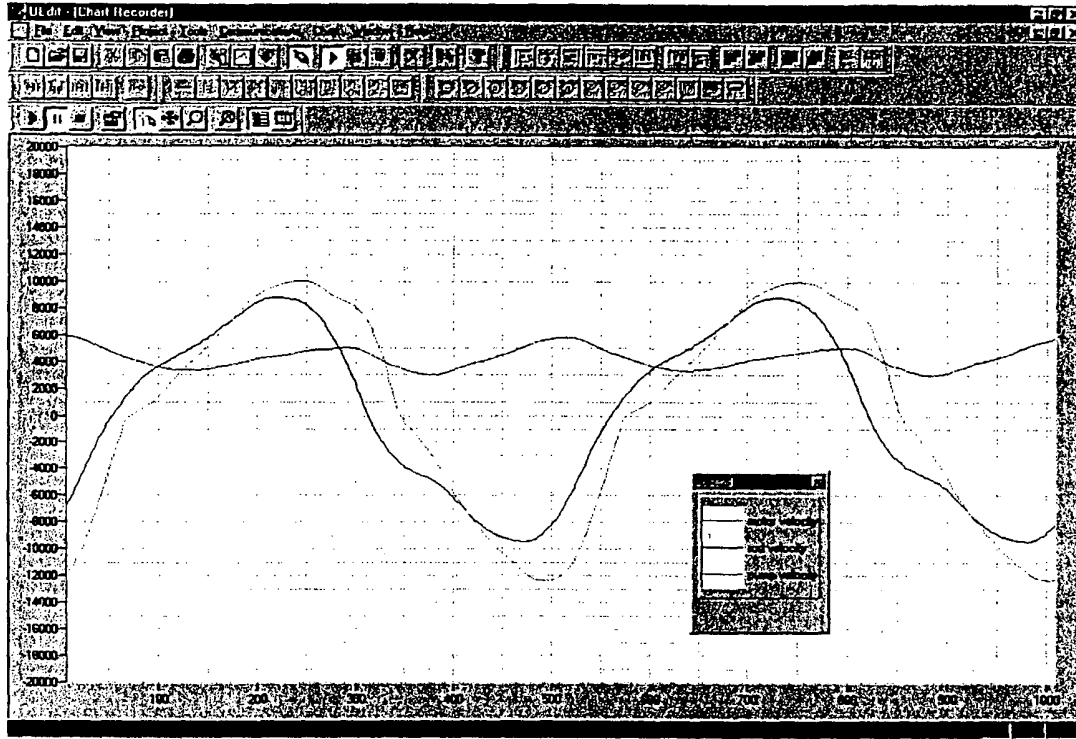


FIG. 24

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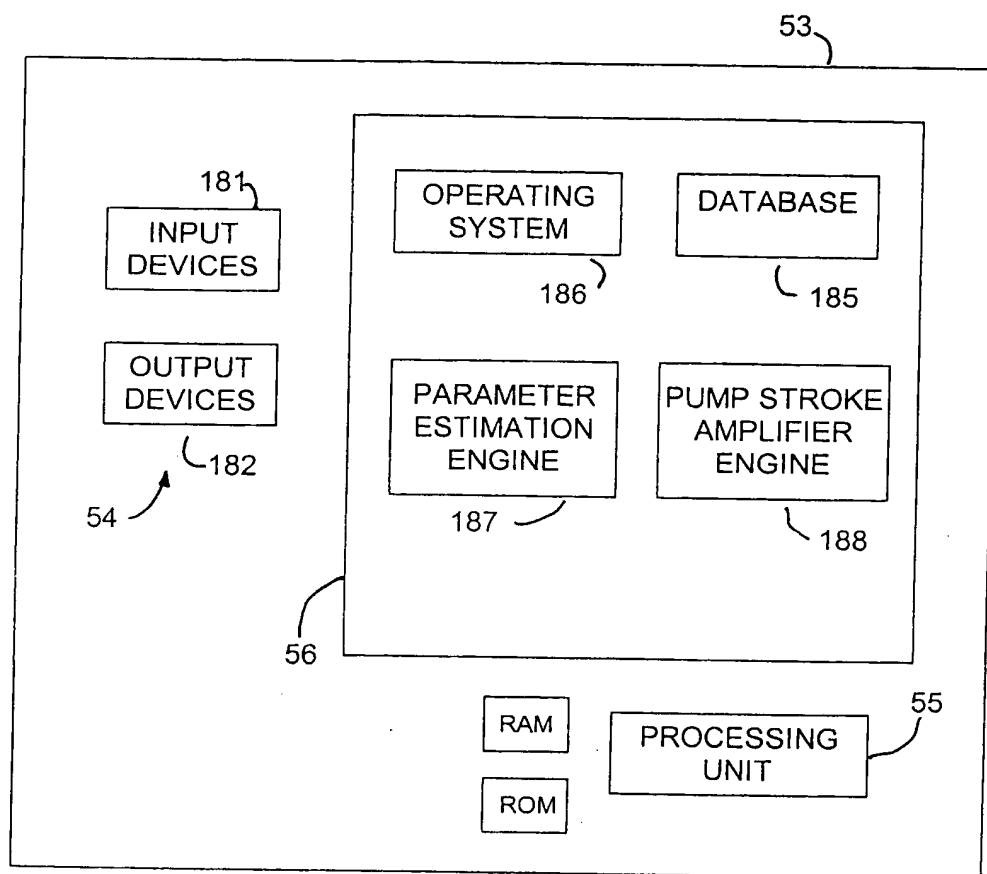


FIG. 25